CLAIMS

1. A UV flame sensor comprising electronic circuitry formed on a multi-layer Printed Circuit Board (PCB), said electronic circuitry including:

a photodiode detecting an input signal;

an amplifier amplifying said input signal and providing an output signal;

a FET providing automatic gain control; and

at least one capacitor providing stability to the output signal of the amplifier;

wherein said capacitor is formed from a capacitance laminate buried in said PCB.

2. The UV flame sensor of claim 1, wherein the sensor is adapted to operate at temperatures of up to 125°C.

3. The UV flame sensor of claim 1, further comprising at least one guard band on each layer of the PCB.

4. The UV flame sensor of claim 3, wherein said guard bands are disposed at substantially identical positions in each said layer of the PCB.

5. The UV flame sensor of claim 1, wherein the PCB has at least one interior layer.

6. The UV flame sensor of claim 5, further comprising tracks of equal potential disposed at substantially identical locations on each of the interior layers of the PCB.

7. The UV flame sensor of claim 1, further comprising a low pass filter.

8. The UV flame sensor of claim 3, wherein the guard bands on each said layer of the PCB are substantially identically shaped.

9. The UV flame sensor of claim 6, wherein the tracks on each said layer of the PCB are substantially identically shaped.

10. The UV flame sensor of claim 1, wherein said sensor has a response time of less than 25 milliseconds.

11. A UV flame sensor comprising:

a housing;

lensing disposed within said housing; and

electronic circuitry formed on a multi-layer PCB and disposed within said housing;

wherein said circuitry includes:

a photodiode detecting an input signal through said lensing;

an amplifier amplifying said input signal and providing an output signal;

a FET providing automatic gain control; and

at least one capacitor providing stability to the output signal of the amplifier; and

wherein said capacitor is formed from a capacitance laminate buried in said PCB.

12. The UV flame sensor of claim 11, wherein the sensor is adapted to operate at temperatures of up to 125°C

13. The UV flame sensor of claim 11, further comprising at least one guard band on each layer of the PCB.

14. The UV flame sensor of claim 13, wherein said guard bands are disposed at substantially identical positions in each said layer of the PCB.

15. The UV flame sensor of claim 11, wherein the PCB has at least one interior layer.

16. The UV flame sensor of claim 15, further comprising tracks of equal potential disposed at substantially identical locations on each of the interior layers of the PCB.

17. The UV flame sensor of claim 13, wherein the guard bands on each said layer of the PCB are substantially identically shaped.

18. The UV flame sensor of claim 16, wherein the tracks on each layer of the PCB are substantially identically shaped.

19. The UV flame sensor of claim 11, further comprising a low pass filter.

20. The UV flame sensor of claim 11, wherein the sensor has a response speed of less than 25 milliseconds.

21. A method for producing a UV flame sensor, said method comprising:

fabricating a PCB with at least three layers, at least one of said layers being an interior layer, and said layers having guard bands, ground planes, and tracks;

placing the guard bands in identical positions on each said layer of the PCB;

mimicking tracks of equal potential on the interior layers of the PCB;

burying a capacitance laminate on the interior layers of the PCB;

disposing on said PCB a photo diode for detecting an input signal, an amplifier for amplifying said input signal and providing an output signal, and a FET providing automatic gain control; and

using the capacitance laminate buried on the interior layers of said PCB to form at least one capacitor so as to provide stability to the output signal of the amplifier.